

Emission Summary

Permit Number: 969212P

TVA Oak Ridge Microwave Station, 01-0271-01

Source Status: New ☒ Modification ☐ Expansion ☐ Relocation ☐ **Permit Status:** New ☒ Renewal ☐

PSD ☐ NSPS ☒ NESHAPs ☒ **Previous Permit Number:** Construction _____ Operating _____.

	Pounds/Hour			Tons/Year ³				Date of Data	*	Applicable Standard 1200-03-
	Actual ¹	Potential	Allowable ²	Actual	Potential	Allowable	Net Change			
TSP	Neg	Neg	0.07	Neg	Neg	0.02				06-.02(2)
CO	0.41	0.41	37.11	0.1	0.1	9.28				09-.03(8) & NSPS JJJJ
HC + NO _x			0.96			0.24				09-.03(8) & NSPS JJJJ

* - Source of data

¹ Actual emissions (pounds/ hour) for TSP and CO based on AP-42 emission factors.

² Allowable emissions (pounds/ hour) for CO and HC + NO_x based on 40 CFR 60 JJJJ.

³ Emissions (Tons/ Year) based on 500 hours/ year EPA default value for emergency generator operation.

PERMITTING PROGRAM: JAT DATE: October 09, 2014

CONSTRUCTION PERMIT SUMMARY REPORT

Company Name: TVA Oak Ridge Microwave Station
Permit Number(s): 969212P

File Number: 01-0271
Source Point Number(s): 01

EPS Initials: JAT

Application Received (date): September 5, 2014

Application Complete (date): September 5, 2014

Air Quality Analysis Performed? Yes ☐ No ☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

This operation is a new source and consists of one spark ignition propane-fueled emergency generator 43.5hp = 32.44 kw. PM, CO, and HC + NO_x are emitted by this source.

Rules Analysis

Title V ☐ Cond. Major ☐ Minor ☒ Source category listed in 1200-03-09-.01(4)(b)1.(i)? Yes ☐ No ☒

Reason for PSD:	New source above ____ TPY <input type="checkbox"/>	Sig. increase in ____ emissions <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Applicable NSPS:	40 CFR Part 60, Subpart JJJJ <input checked="" type="checkbox"/>	State Rule 1200-03-16-____ <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Applicable NESHAP:	40 CFR Part 61, Subpart ____ <input type="checkbox"/>	State Rule 1200-03-11-____ <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
“ “	40 CFR Part 63, Subpart ZZZZ <input checked="" type="checkbox"/>	State Rule 1200-03-31-____ <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Other Applicable State Rules

TSP Emissions:	1200-03-06-.02(2) <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	NO _x Emissions:	1200-03-09-.03(8) <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
SO ₂ Emissions:	1200-03-____ <input type="checkbox"/> N/A <input type="checkbox"/>	Lead Emissions:	1200-3-____-____ <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
CO Emissions:	1200-03-09-.03(8) <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	____ Emissions:	1200-3-____-____ <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
VOC Emissions:	1200-03-09-.03(8) <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	____ Emissions:	1200-3-____-____ <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

Visible Emissions from this Source not to exceed 20 % opacity per Method 9 (Rule 1200-03-05-.03(6))

Tennessee Valley Authority (TVA) – Oak Ridge Microwave Station

01-0271-01/969212P

Information From Application

Engine 43.5 hp 32.4379 kw
 Max Operating Hours 500 hours 1 hp = 0.745699872 kw

An EPA memorandum (dated September 6, 1995) regarding the calculation of potential to emit for emergency generators states the following: *“The EPA believes that 500 hours is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions.*

(Emission factors based on 40 CFR 60 JJJ)

	Power Rating (kw)	Emission Factor (g/kw-hr)	Allowable Emissions (lb/hr)	Allowable Emissions (tpy)
CO	32.4379	519.0	37.11	9.28
HC+NOx	32.4379	13.4	0.96	0.24

(Emission factors are from AP-42 Table 3.2-3)

	Heat input (MMBtu/hr)	Emission Factor (lb/MMBtu)	Actual Emissions (lb/hr)	Allowable at 500 hr/yr (ton/yr)
PM	0.1106829	9.91E-03	0.001	0.0002742
SO2	0.1106829	5.88E-04	0.000	0.0000163
CO	0.1106829	3.72E+00	0.412	0.1029351
VOC	0.1106829	2.96E-02	0.003	0.0008191
NOx	0.1106829	2.21E+00	0.245	0.0611523

Allowable PM emissions

Design Heat Input (MMBtu/hr) 0.11 1 kw = 3412.14 BTU/hr
 Allowable PM Emissions (lb/MMBtu) 0.60 TAPCR 1200-03-06-.02(2)
 Allowable PM Emissions (lb/hr) 0.07
 Allowable PM Emissions (tons/year) 0.02

prepared by JAT, October 07, 2014